Abstract

Organic Structure

by
Jeffery Alan Kiefer

April, 2011

Director: Hanna Jubran

SCHOOL OF ART AND DESIGN

This supplemental report is based on my thesis exhibition and is an investigation into the influences that drive me to create sculpture. The work stems from a fascination with nature's ability to deconstruct what mankind builds, transforming something new in its place. Through the use of juxtaposed structure, materials and surfaces I explore these relationships. Images of the sculpture and references have been included.

ORGANIC STRUCTURE

A Report of a Creative Thesis

Presented To

The Faculty of the School of Art and Design

East Carolina University

In Partial Fulfillment

of the Requirements for the Degree

Master of Fine Arts

Sculpture

by

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APPROVED BY:

DIRECTOR OF THESIS: _____

Hanna Jubran, MFA

COMMITTEE MEMBER: _____

Carl Billingsley, MFA

COMMITTEE MEMBER: _____

Seo Eo, MFA

COMMITTEE MEMBER: _____

Jim Tisnado, MFA

DIRECTOR OF THE SCHOOL OF ART AND DESIGN:

_____

Michael H. Drought, MFA

DEAN OF THE GRADUATE SCHOOL:

_____

Paul J. Gemperline, Phd

ACKNOWLEDGEMENTS

To my loving wife Pamela for helping me pursue my dream, my family for all of their support and my thesis committee members for their guidance. Thank You.

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INTRODUCTION

Growing up in rural Indiana, I was exposed to abandoned farm homes and rundown structures. Left unattended, they became ruins to investigate. In most recent years, my exploration expanded to cover locations throughout the world, from the crumbling wall of a Scottish monastery to the decaying remains of a foundry in Alabama. Time seemed to devour these man-made structures, erasing the original purpose in their construction, recreating the history behind a building. A silo with its weathered exterior, missing sheet metal, rusted with age and overgrown with vines could become the setting of a lost culture with a forgotten tower.(Plate I) I am drawn to these structures and they inspire me to tell the story of the interactions between them and nature.

Fulfilling my desire to explore, I set out to discover and document locations of abandoned buildings. Taking photos of inspiring sites, allows me to record them and capture a moment in time during the transformation that is occurring. This way I have a frame of reference when recreating the building's essence in one of my sculptures.

During a visit to the Scottish Highlands I explored Balquhidder Kirk. Nearby stands a set of ruins of the 17th century Eaglais Beag(Plate II), the first church on the site. The church was used until 1855 when it was abandoned due to disrepair. Because of dampness, ferns and fungi began to grow on the inside of the walls. The original church was partially dismantled; the stone was used to create a new church nearby. A large portion of the walls remain and provides a barrier for trees growing inside from the

strong winds that blow over the Scottish hills. The Church has been transformed from a shelter of a congregation to a wind barrier that allows trees to grow in a harsh climate.

With the long absence of human touch, these buildings take on a new role, supporting the growth of nature and becoming an incubator for new flora. Throughout the decades of transformation, the internal supports that were the framework for the building become the external support for new plant life. Inspiration is drawn from interactions such as these, between the thriving flora and crumbling ruins.

I used to visit my great-grandmother's old stone barn, still held together by poison ivy that had been on the barn so long that it had rooted through the stone, deep into the walls. To remove the plant, which had become a part of the building itself, would destroy the stone foundation on which it thrived and the barn would be destroyed.

When the structure is no longer being used, the response is to tear it down instead of finding a new use for the building. This is especially the practice for industrial sites. I discovered this first hand in 2009 when visiting Sloss Furnaces in Birmingham, Alabama for the National Conference on Cast Iron Art. This industrial park is now registered as a national historic landmark and has become a center for tourism and community involvement. It took years to establish the revitalization of the site and has now given a second life to an area that was in a state of ruin.

To understand this transformation, it is important to understand its beginning. Sloss was founded in 1881 and for ninety years produced iron to fuel American industry. In the late 60's the demand for iron began to drop, forcing the furnace to shut its doors in 1971. For a decade the site set unattended and was slated to be demolished. A public

outcry at its impeding destruction led to an initiative to save Sloss. The intervention was a success. Sloss has once again become an important part of the community, hosting concerts, festivals and conferences. It also survives to tell the story of Birmingham's industrial past to a new generation.

With the revitalization at Sloss the grounds have become a beacon to the harmonizing power of nature. Some of the industrial complexes on the site have been restored to show how they used to look and function when it was operational. Other areas have not fully been restored but are being preserved so they will not decay anymore. And some areas have been over grown with plants and vines. Sloss has found a balance between preservation, restoration and ruin.(Plate III)

The study of Sloss and other sites is the source material and inspiration to create my work. The sculptures that I make are not a direct reference of locations but are a culmination of my experiences and the diversity of the sites. Nature's resiliency to survive and grow through adversity brings a powerful element to my sculptures. The relationship of the organic and man-made structure drives me to find the same harmony in my work.

PROCESS

Learning new techniques and processes has been an ongoing interest of mine. This drive for knowledge has led me to explore many different paths and in doing so, has provided me with a variety of life experiences. Coming into the sculpture program with a background in 3D Computer Animation required me to learn new skills, such as metal casting, steel fabrication and working in clay. I push and expand upon my learning by discovering the limitations of the material and processes and by experimenting within and beyond them.

This trial and error process in my work creates an unknown variable in the outcome. As in nature, while some elements may be controlled, the result is still uncertain. When planting seeds, the plant can be watered and pruned, but there is still no control over where the leaf will sprout. There will always be an unanticipated element. Interest lies in this unknown, which allows natural occurrences to have inclusion in my process.

Experimentation is an integral step in my creative process. I began to manipulate specific techniques emphasizing texture and form, resulting in unique artwork. To create a semi-controlled creation of geometric forms, a direct carving technique is used on resin-bonded sand molds. Combining sand with resin and a catalyst creates a desired consistency that can be molded into blocks. Once the sand cures and becomes hardened, it is ready to be carved. Pneumatic tools are used to create lines and shapes in the sand creating the voids where the iron will flow during the casting process. The depth and pattern of the carving controls the outcome of the final cast element. Experimenting

with overlapping and combining blocks of carved sand, a technique was found that allows me to create intricate interiors, which mimic those of architecture.

To create the unique textures on the cast iron work, tree bark and rusted metal are included as reactionary elements in the mold. The incorporation of these materials is not traditional since they interact with the iron, and cause volatile reactions and unanticipated results. During the carving process of the resin-bonded sand of the mold, pieces of wood are incorporated. When molten iron is poured into the mold, it begins to fill the voids left in the sand by the carving. As the metal is flowing, it burns into the wooden elements replacing them with iron. The one-of-a-kind textures that result from this process are full of voids and pits, with a resemblance to wood that has been burned.

In contrast to the heavy textured elements of cast iron, ceramic materials and processes are used to obtain a light, smooth, and gentle surface. I use the process of slip-casting, to give a baseline for experimenting, which allows me to create multiple pieces from the same mold. This technique uses clay that is thinned to a liquid state called slip, which can be poured into molds made of plaster. The water in the clay is absorbed into the plaster mold. This creates a delicate shell form, where the two come in contact with each other and is a copy of the interior form of the mold. Thickness is controlled by the amount of time that the slip is allowed to set in the mold. The longer the time, the thicker the shell will become. The slip is poured out of the mold once the desired thickness is reached.

Using this process, I produce numerous copies each with a slightly different wall density. With these multiples, I have the flexibility to experiment by over-firing them in

a kiln, which deforms their original shape. The process of over-firing heats the clay past its thermal threshold causing them to warp and slump on their own. This is traditionally avoided because it distorts the form. These deformations vary greatly, depending upon proximity to the heat source and the thickness of the wall of clay. The over-firing of the ceramics result in puffed out forms that appear to collapse on themselves and even tear.

When a specific shape is needed, I hand build the ceramic pieces. A lump of clay, often porcelain, is rolled until it is thin and even. These slabs of clay are then cut to the desired size and pattern. To create the tall cylindrical forms the porcelain is draped around a pipe to aid in shaping and stability.

These processes that I have learned and experimented with during the past three years are utilized to create the work. Through trial and error I have pushed beyond conventional technique. Of the many ways to use these processes, I focused on the ones that allow me to obtain the results desired by using materials that are closely associated with my influences.

MATERIALS

The relationships between the various materials used in my work reflect the many ways nature interacts with man-made structures. Using materials to emphasize the delicate balance of their relationship is inspired by my observations of the relationships that nature creates when reclaiming abandoned structures.

Within the forms themselves, the internal support structure is intentionally exposed to showcase its value in contrast to the exterior surface. I choose to mimic the latticework of architectural forms by creating pieces that have visibly different elements; some are strongly geometric while others are smooth and organic. It is important to the relationship to have these forms reference elements found in nature as well. An interaction arises when the two sides begin to depend on each other for support.

Clay and iron are the predominant medium in these works. The clay body I prefer the most is porcelain, because of its fragility, thinness and translucency. I also over-fire the porcelain to create warm colors and distorted forms. Iron is cold and brings a strength and rigidity to shape the framework of the piece. I like the cold grey surface of the iron in contrast to the warm colors of the porcelain.

Clay can be used to create smooth, organic shapes that represent the fluid lines of organic life forms, such as vines and roots. The direct nature in which it can be manipulated and shaped allows it to take the form that is desired to fit within the cast iron elements. Clay provides a warmth and sense of fragility to balance the work. The form in which it flows adds an element of character, bringing personality to each piece, capturing the essence of organic life.

I am drawn to cast iron because of the traditions and processes associated with this industrious metal. The history of the element lends itself to easily represent the steel architectural forms that are the source of my inspiration. In order to capture the rich blend of nature and structure desired, cast metal allows me to utilize texture and form.

The versatility of cast iron allows me to utilize it by itself to represent the balance desired in a piece. With the clay, the relationship was easily identifiable. I needed to approach the cast iron differently by emphasizing the contrast of smooth and textured surfaces to reaffirm the relationship of man-made and nature. To accomplish this, the role of the clay is replaced with larger areas of smooth and curved surfaces of metal. This will successfully create a contrasting effect, while beginning to simplify the finished sculpture.

Using steel provides a freedom to accomplish large forms by keeping the weight relatively down and the ability to directly shape it. Steel is derived from the refining of iron through the reduction of its carbon content. This creates an alloy that is more ductile, rust resistant and is easier welded.

Other materials that reference architectural components also play a vital role in my work. Concrete is incorporated into the bases of most of the pieces. It is cast into the desired shape and then purposefully distressed to simulate aging. This allows the bases to have a fractured and worn feel that is appropriate to the piece.

The materials that are chosen have a strong history and tradition in sculpture. By using them with unconventional processes such as casting iron not molds that contain

wood and over-firing clay, I obtain unique results which recall textures and structures that inspire me.

I. Saw dust burner Vanceboro, North Carolina

II. Eaglais Beag Killin, Scotland, UK

III. Sloss Furnaces Birmingham, Alabama

IV. House in the Woods Greenville, North Carolina

V. “Ascension” Porcelain, Iron, Steel, Concrete 22x10x10 inches

ASCENSION

An aging silo left abandoned in the farmer's field begins its second life as a protector of nature. The metal cladding that once covered the structure has begun to peel away, leaving the exposed supports. Plants grow in the center, using the framing as latticework. The silo is a fundamental piece of the rural landscape, providing protection for the harvest. When the farm has been abandoned, the silo can take on a new protective role, defending and supporting new life.

Ascension" is my sculptural response to the silo described in the preceding paragraph. This small version of the abandoned silo contrasts porcelain and cast iron, on a cast concrete base. The textures, structures and relationships reference the forms, materials and processes of nature overtaking and replacing the manmade

VI. “Sprout” Porcelain, Iron, Steel, Concrete 14x4x9 inches

SPROUT

"Sprout" references a forgotten silo that has deteriorated so far that the only thing holding it up is the organic material. The role of protector has been reversed and nature has become the guardian. "Sprout" focuses on the point when the plant growth can begin supporting the ruins. As the buildings structure ages it begins to lean and rely on the organic growth for support.

The weathered cast iron climbs around the porcelain. Pieces of wood were included in the mold during casting. The wood burned out when the metal was poured in, leaving the texture of wood on the iron. The thinness and fractured state of the casting emphasizes how much it needs the sprout for support.

The interior porcelain is warped with folds and contoured to meet the shape of the iron. It fits with the spiral like it grew within the confines of the iron. This forces it to take the shape of the limiting space.

VII. “Caged” Iron, Ceramic, Steel, Concrete 15x8x12 inches

CAGED

The façade is all that remains of a building that was found abandoned. Nature has begun to reclaim the site and envelop the whole structure, surrounding it with a protective thicket of vines. This relationship speeds the erasing of the construction from the landscape by camouflaging it within its' surroundings.

The exterior cast iron of "Caged" becomes a cage to the internal ceramic protecting and trapping at the same time. The cast iron becomes the organic element, wrapping around the ceramic façade, which has a charred finish, hinting at how the building became a ruin. The whole piece is angled, as if at the point of falling over and becoming nothing.

The base is made of steel and concrete that has been distressed to imitate aged reclaimed materials. The use of these traditional building materials brings an architectural connection to the foundation.

VIII. “Torn” Porcelain, Iron 10x8x8 inches

TORN

The remnants of a strong foundation and a single column are all that remain of an abandoned building. Nature has overgrown the site and is now supported by the solitary column. The single tear in the organic membrane exposes an interior that is empty. This void was formed when the skeleton of the structure had crumbled and vanished.

"Torn" is comprised of a slip-cast porcelain cube that was over-fired, causing it to warp and tear. A cast iron column is inserted in the tear providing internal support. The pillowing and translucency of the porcelain cube give it the characteristics of being light and delicate.

A copper sulfate patina is used on the iron to match the warm color of the wood fired porcelain. This patina, combined with oxidation of the iron, also creates a white crust, creating a sense of age.

IX. “Sanctum” Iron, Plaster, Steel 18x9x9 inches

SANCTUM

While driving in the country I noticed an abandoned tobacco barn that had been completely overgrown by plants and vines. The growth pushed out through all openings, seeming to tear the building down from the inside out. Although it was devouring the structure, it was also providing the last bit of support by filling all the voids.

"Sanctum" is my response to the dichotomy of growth which destroys and supports at the same time. The cast iron is fractured and broken but still held together by the plaster that fills the interior. The rust from the iron leeches through the porous plaster. A simple steel fabricated arc connects the top and bottom sections of the sculpture. The base and top have the same diameter, suggesting that they started out directly connected but, over time have been pushed apart.

X. “Metropolis” Bronze, Chestnut, Steel 18x9x9 inches

METROPOLIS

The contrast of materials in “Metropolis” is more symbolic and formal than in most of the sculptures in this body of work. The bronze casting represents nature creeping back into the city and growing in the ruins where the abandoned structures have begun to crumble and fade. The whole system is now on a tipping point, balanced between the city and nature. If the delicate equilibrium remains then a harmony between the two can grow, an integration of nature can begin to bloom in the city.

The bronze sets on a large wooden base, that mirrors its gentle sweeping shape, this references the sites roots in nature. To provide more contrast to the base, one side of the chestnut is finished naturally with a coat of polyurethane for protection and the other side has been charred to age and emphasis the wood grain.

XI. “Prototype” Iron, Concrete, Steel 84x22x17 inches

PROTOTYPE

"Prototype" is an expansion on the more symbolic path to defining the bond of nature and man-made structures. Instead of using multiple materials to emphasis the contrast of the relationship it uses cast iron solely. It was also the first time I painted a work.

A large portion of the casting is solid, sweeping around the curve until it breaks up into slices. This change in texture creates a movement to the piece. The bottom of the piece is curved and balanced to keep it rocked backwards on the base. The vibrant green color is the only direct reference to nature.

XI. “Windy City Blues” Iron, Concrete, Steel 14x9x4 inches

WINDY CITY BLUES

A trip to Chicago inspired me to expand on the series that uses cast iron as the only material to capture both the organic and man-made. This piece is a depiction of a sky scrapper blowing and wavering in the wind. These massive structures dot the city landscape as though they grew from the very ground.

Large areas of the casting are solid, bringing a weight to the piece. The other work has a naturally aged coloring to relate to the countryside, these needed to fit in with a city. I used paint on the piece because of the vibrant colors of the city lights. By using a subtle inner glow of color they capture the faint pulse of their surroundings.

By mixing a thin bath of paint combined with vinegar and water the piece can be dipped to get the paint inside the casting. The exterior is then selectively cleaned to remove paint from specific areas. The remaining vinegar and water causes the surface to develop a light coating of rust. The piece is then sealed with a polyurethane spray to retard the rusting process and protect the surface.

XII. “The Sticks” Iron, Concrete, Steel 10x7x7 inches

THE STICKS

The steel beams that form the foundation of a building stick out of the ground, elevating the floors above the city streets. What if these beams continued to grow like trees, forcing the buildings to rise from their foundations, pushing them towards the sky? This building grows like a tree house, perched in branches, with the branches above sprouting and continuing upwards.

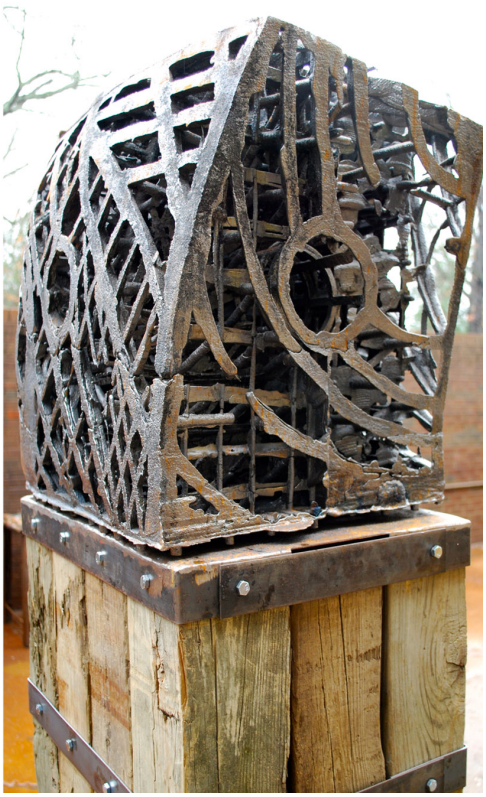
It sets on a base made of concrete and steel. This platform functions as the foundation from which the piece grows. The tapered base moves the piece vertical, drawing the eye upwards.

XIII. “Cascade” Steel, Aluminum 108x5x40 inches

CASCADE

This outdoor piece explores the relationship of the organic to the geometric by reversing the way we usually think of these concepts. In this case the large steel structure is the more organic looking form. It curves and bends in space like a growing tree trunk. The exterior steel has been manipulated in the construction process to warp and torque the shape. By working with the metal in this way the form receives an organic flow. The steel is then left to weather producing a sheet of rust to contrast with the aluminum. The sweeping lines of the fabricated steel have a section cut away to reveal an aluminum relief. This interior geometry represents the support that is present in both objects made by man and nature.

The interior aluminum is a series of overlapping rectangles welded together forming a strong geometric pattern. This allows light to pass through revealing the delicate nature in which things are structured. Since a patina has not been applied to the aluminum it provides a contrast to the rusted steel. The clean, very machined, look to the surface makes it connect to the man-made while the deterioration of the steel resonates a natural element.



XIV. “Beacon” Iron, Steel, Wood 84x22x17 inches

BEACON

Along the east coast, nature has a different way of interacting and reclaiming man-made structures. During a trip to the beaches of North Carolina I noticed how the pylons supporting a pier had aged from the constant exposure to the water. This bombardment by the ocean caused the wood to crack and warp. The pier remained intact and stable even with its foundation shifting. It fascinated me to see that these few old beams could support the massive weight of the pier. The iron references the old lighthouses that are found along the coast. Over the years the harsh weather conditions have deteriorated these beacons that dotted the shore.

The aged wood is bound together supporting the weight of the 350-pound casting. With only three of the timbers touching the ground a sense of precariousness is brought to the balance of the piece. The reclaimed treated lumber that I used has deteriorated, cracked and broken creating surfaces that strongly reference wood found along the coast.

Using the direct carving technique to create the casting lets numerous overlapping lines form a substantial mass while still allowing light to be diffused. The exterior lines form radiating arcs building like waves. An opening approximately eye height penetrates through the casting this gives a clear view of the interior.

CONCLUSION

This body of work expresses the wonder I feel when viewing ruined buildings that have been taken back by nature.(Plate IV) The moments captured reflect on the delicate relationship that exists between nature and man-made structures.

Using multiple scales to produce the work expresses different aspects of what draws me to the ruined sites. Creating small-scale pedestal size pieces has allowed the investigation of overarching forms and unique textures that are present. The large-scale work that is produced concentrates on capturing the emotional impact provided by the locations.

Producing numerous works based on these locations has evolved the concept from a direct interpretation of the source material to a more symbolic analysis. The introduction of the city has expanded the site location to encompass more than rural ruins. The wonder I receive from these sites can be shared through my sculpture.

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